

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A bone growth composition, comprising:

- (a) a substrate;
- (b) bone growth protein;
- (c) a source of calcium; and,
- (d) a source of phosphate,

wherein said composition, when implanted in a mammal at a site in need of bone growth, ~~has an acidic buffering potential in physiological solution~~ is capable of buffering the microenvironment surrounding said site to an acid pH whereby bone growth is enhanced at said site.

2. (Currently amended) A bone growth composition, comprising:

- (a) a substrate;
- (b) a bone growth protein; and,
- (c) a salt composition consisting essentially of an acidic calcium phosphate salt,

wherein the bone growth composition, when implanted in a mammal at a site in need of bone growth, ~~has an acidic buffering potential in physiological solution~~ is capable of buffering the microenvironment surrounding said site to an acid pH whereby bone growth is enhanced at said site.

3. (Previously presented) A bone growth composition for implantation into a mammal, comprising:

- (a) a substrate;
- (b) a bone growth protein; and,
- (c) a salt composition consisting essentially of one or more acidic calcium phosphate salts,

wherein the composition, when implanted into a mammal, buffers the immediate physiological environment around the composition to a pH between about 4 and about 7.

4. (Original) A bone growth composition as claimed in Claim 1, wherein the source of calcium is an acidic calcium phosphate salt.

5. (Original) A bone growth composition as claimed in Claim 4, wherein the source of calcium is selected from the group consisting of calcium monophosphate, calcium hydrogen phosphate, and calcium pyrophosphate.

6. (Original) A bone growth composition as claimed in Claim 1, wherein the source of phosphate is a sodium phosphate salt.
7. (Original) A bone growth composition as claimed in Claim 1, wherein the substrate is selected from the group consisting of collagen, fibrin, alginate and mixtures thereof.
8. (Original) A bone growth composition as claimed in Claim 1, wherein the bone growth protein is selected from the group consisting of purified bone growth factors, recombinantly produced bone growth factors and mixtures thereof.
9. (Withdrawn) A bone growth composition as claimed in Claim 8 wherein the bone growth protein comprises a transforming growth factor β (TFG- β) superfamily protein.
10. (Original) A bone growth composition as claimed in Claim 8 wherein the bone growth protein comprises Bone Protein.
11. (Withdrawn) A process for producing an implantable bone growth composition, comprising:
 - (a) producing a dispersion of collagen fibrils containing a solubilized sodium phosphate salt; and
 - (b) adding a calcium chloride salt to the dispersion of collagen fibrils to precipitate a calcium phosphate salt onto the surface of said collagen fibrils to produce an implantable bone growth composition.
12. (Withdrawn) The process of Claim 11, wherein said solubilized sodium phosphate salt is calcium hydrogen phosphate dihydrate and wherein said calcium phosphate salt is calcium dichloride dehydrate.
13. (Withdrawn) A process for producing an implantable bone growth composition, comprising:
 - (a) producing a dispersion of collagen fibrils containing a solubilized calcium chloride salt; and
 - (b) adding a sodium phosphate salt to the dispersion of collagen fibrils to precipitate a calcium phosphate salt onto the surface of said collagen fibrils to produce an implantable bone growth composition.

14. (Withdrawn) The process of Claim 13, wherein said solubilized sodium phosphate salt is calcium hydrogen phosphate dihydrate and wherein said calcium phosphate salt is calcium dichloride dihydrate.

15. (Withdrawn) A process for the induction of bone formation in a mammal, comprising implanting a bone growth composition in said mammal, wherein said composition comprises,

(a) a substrate;

(b) bone growth protein;

(c) a source of calcium; and,

(d) a source of phosphate,

wherein said composition has an acidic buffering potential in physiological solution.

16. (Withdrawn) A process as claimed in Claim 15, wherein said source of calcium is an acidic calcium phosphate salt.

17. (Withdrawn) A process as claimed in Claim 16, wherein said acidic calcium phosphate salt is selected from the group consisting of calcium monophosphate, calcium hydrogen phosphate, and calcium pyrophosphate.

18. (Withdrawn) A process as claimed in Claim 15, wherein said source of phosphate is a sodium phosphate salt.

19. (Withdrawn) A process as claimed in Claim 15, wherein said substrate is selected from the group consisting of collagen, fibrin, alginate and mixtures thereof.

20. (Withdrawn) A bone growth composition as claimed in Claim 15, wherein the bone growth protein is selected from the group consisting of purified bone growth factors, recombinantly produced bone growth factors and mixtures thereof.

21. (Withdrawn) A bone growth composition as claimed in Claim 20 wherein the bone growth protein comprises a transforming growth factor β (TGF- β) superfamily protein.

22. (Withdrawn) A bone growth composition as claimed in Claim 20 wherein the bone growth protein comprises Bone Protein.

23. (Withdrawn) A process as claimed in Claim 15, wherein said process is a process selected from the group consisting of hip replacement operation, knee replacement operation, spinal fusion, repair of periodontal defects, treatment of osteoporosis, repair of bone defects and repair of bone fractures.

24. (Currently amended) A bone growth composition, comprising:

- (a) a substrate;
- (b) a bone growth protein;
- (c) a source of calcium; and,
- (d) a source of phosphate,

wherein said composition, when implanted at a site in need of bone growth ~~the pH of a solution initially having a surrounding microenvironment at physiological pH, is capable of lowering the pH of said microenvironment lowered to less than 7 when the bone growth composition is placed in said solution~~ whereby bone growth is enhanced at said site.

25. (Currently amended) The bone growth composition of claim 24, wherein ~~the pH of the solution initially having a physiological pH is lowered~~ said composition is capable of lowering the pH of said microenvironment to between about 4 and about 7 ~~when the bone growth composition is placed in said solution.~~

26. (Currently amended) The bone growth composition of claim 25, wherein ~~the pH of the solution initially having a physiological pH is lowered~~ said composition is capable of lowering the pH of said microenvironment to between about 5 and about 6.8 ~~when the bone growth composition is placed in said solution.~~

27. (Currently amended) The bone growth composition of claim 25, wherein ~~the pH of the solution initially having a physiological pH is lowered~~ said composition is capable of lowering the pH of said microenvironment to between about 5.5 and about 6.7 ~~when the bone growth composition is placed in said solution.~~

28. (Currently amended) A bone growth composition, comprising:

- (a) a substrate selected from the group consisting of collagen, fibrin, alginate and mixtures thereof;

(b) a bone growth protein selected from the group consisting of TGF- β superfamily proteins;
and

(c) an acidic calcium phosphate salt composition selected from the group consisting of calcium monophosphate, calcium hydrogen phosphate, calcium pyrophosphate, and mixtures thereof,

wherein, when the bone growth composition is implanted at a site in need of bone growth the ~~pH of a solution~~ having a surrounding microenvironment initially ~~having a~~ at physiological pH, said composition is capable of lowering said pH ~~is lowered~~ to between about 5 and about 6.8 whereby bone growth is enhanced at said site ~~when the bone growth composition is placed in said solution.~~

29. (Currently amended) The bone growth composition of claim 28, wherein the acidic calcium phosphate salt composition consists essentially of calcium hydrogen phosphate, and wherein said composition is capable of ~~the pH of a solution initially having a physiological pH is lowered~~ lowering the initial physiological pH of the microenvironment of said site to between about 5 and about 6.8 ~~when the bone growth composition is placed in said solution~~ after implantation of said composition at said site.

30. (New) The bone growth composition of claim 1 further comprising a buffering agent other than a calcium phosphate salt.

31. (New) A bone growth composition, comprising:

- (a) a substrate;
- (b) a bone growth protein;
- (c) optionally, a source of calcium;
- (d) optionally, a source of phosphate;
- (e) an acidifying agent; and
- (f) optionally, a buffering agent other than a calcium phosphate salt,

wherein said composition, when implanted at a site in need of bone growth initially having a surrounding microenvironment at physiological pH, is capable of lowering the pH of said microenvironment to less than 7 whereby bone growth is enhanced at said site.